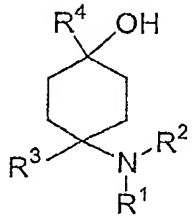
Amendments to the Claims:

The following listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A substituted 4-aminocyclohexanol compound corresponding to formula I,



I

wherein

R^1 and R^2 independently of one another represent H; C_{1-8}-alkyl or C_{3-8}-cycloalkyl, in each case saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; aryl- or heteroaryl, in each case mono- or polysubstituted or unsubstituted; or aryl, C_{3-8}-cycloalkyl or heteroaryl bonded via C_{1-3}-alkylene and in each case mono- or polysubstituted or unsubstituted; wherein R^1 and R^2 are not both H, or

the radicals R^1 and R^2 together form a ring and represent $CH_2CH_2OCH_2CH_2$, $CH_2CH_2NR^5CH_2CH_2$ or $(CH_2)_{3-6}$,

wherein

R^5 represents H; C_{1-8}-alkyl or C_{3-8}-cycloalkyl, in each case saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; aryl- or heteroaryl, in each case mono- or polysubstituted or unsubstituted; or aryl, C_{3-8}-cycloalkyl or heteroaryl bonded via C_{1-3}-alkylene and in each case mono- or polysubstituted or unsubstituted;

R^3 represents C_{1-8}-alkyl or C_{3-8}-cycloalkyl, in each case saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; or aryl, C_{3-8}-cycloalkyl or heteroaryl bonded via a saturated or unsaturated, branched or unbranched, substituted or unsubstituted C_{1-4}-alkyl group and in each case unsubstituted or mono- or polysubstituted;

R^4 represents C_{3-8}-cycloalkyl, aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted; $-CHR^6R^7$, $-CHR^6-CH_2R^7$, $-CHR^6-CH_2-CH_2R^7$, $-CHR^6-CH_2-CH_2-CH_2R^7$, $-C(Y)R^7$, $-C(Y)-CH_2R^7$, $-C(Y)-CH_2-CH_2R^7$ or $-C(Y)-CH_2-CH_2-CH_2R^7$; or $-R^8-L-R^9$

wherein

Y = O, S or H_2;

R^6 represents H; C_{1-7}-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; or $C(O)O-C_{1-6}$-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted;

R^7 represents H; C_{3-8}-cycloalkyl, aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted;

R^8 represents aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted;

L represents -C(O)-NH-, -NH-C(O)-, -C(O)-O-, -O-C(O)-, -O-, -S- or $-S(O)_2-$; and

R^9 represents aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted,

or a salt thereof with a physiologically tolerated acid.

2. (original) The compound of claim 1, wherein said compound is in the form of a free base.

3. (original) The compound of claim 1, wherein said compound is present in the form of a pure enantiomer or pure diastereoisomer.

4. (original) The compound of claim 1, wherein said compound is present in the form of a mixture of stereoisomers.

5. (original) The compound of claim 1, wherein said compound is present in the form of a racemic mixture.

6. (original) The compound of claim 1, wherein said compound is present in the form of a solvate.

7. (original) The compound of claim 1, wherein said compound is present in the form of a hydrate.

8. (original) The compound of claim 1, wherein

R^1 and R^2 independently of one another represent H or

C_{1-8}-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; wherein R^1 and R^2 are not both H,

or

R^1 and R^2 together form a ring and represent $CH_2CH_2OCH_2CH_2$, $CH_2CH_2NR^5CH_2CH_2$ or $(CH_2)_{3-6}$,

wherein R^5 represents H or

C_{1-8}-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted.

9. (original) The compound of claim 8, wherein:

R^1 and R^2 independently of one another represent H or

C_{1-4}-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; where R^1 and R^2 are not both H,

or

R^1 and R^2 together form a ring and represent $(CH_2)_{4-5}$.

10. (original) The compound of claim 9, wherein:

R^1 and R^2 independently of one another represent methyl or ethyl or R^1 and R^2 together form a ring and represent $(CH_2)_5$.

11. (original) The compound of claim 1, wherein:

R^3 represents C_{3-8}-cycloalkyl, unsubstituted or mono- or polysubstituted; or aryl, C_{3-8}-cycloalkyl or heteroaryl bonded via a saturated or unsaturated, unbranched, substituted or unsubstituted C_{1-4}-alkyl group and in each case unsubstituted or mono- or polysubstituted.

12. (original) The compound of claim 1, wherein:

R^3 represents C_{5-6}-cycloalkyl, unsubstituted or mono- or polysubstituted; or C_{5-6}-cycloalkyl, phenyl, naphthyl, anthracenyl, thiophenyl, benzothiophenyl, pyridyl, furyl, benzofuranyl, benzodioxolanyl, indolyl, indanyl, benzodioxanyl, pyrrolyl, pyrimidyl or pyrazinyl bonded via a saturated, unbranched C_{1-2}-alkyl group and in each case unsubstituted or mono- or polysubstituted.

13. (original) The compound of claim 1, wherein:

R^3 represents phenyl, pyridyl, furyl or thiophenyl bonded via a saturated, unbranched C_{1-2}-alkyl group and in each case unsubstituted or mono- or polysubstituted.

14. (original) The compound of claim 1, wherein:

R^4 represents C_{3-8}-cycloalkyl, aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted; or $-R^8-L-R^9$.

15. (original) The compound of claim 1, wherein:

R^4 represents cyclobutyl, cyclopropyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, anthracenyl, indolyl, naphthyl, benzofuranyl, benzothiophenyl, indanyl, benzodioxanyl, benzodioxolanyl, acenaphthyl, carbazolyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, fluorenyl, fluoranthenyl, benzothiazolyl, benzotriazolyl or benzo[1,2,5]thiazolyl or 1,2-dihydroacenaphthenyl, pyridinyl, furanyl, benzofuranyl, pyrazolinonyl, oxopyrazolinonyl, dioxolanyl, adamantyl, pyrimidinyl, quinolinyl, isoquinolinyl, phthalazinyl or quinazolinyl, in each case unsubstituted or mono- or polysubstituted; or $-R^8-L-R^9$.

16. (original) The compound of claim 1, wherein:

R^4 represents cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, anthracenyl, indolyl, naphthyl, benzothiazolyl, benzofuranyl, benzothiophenyl, indanyl, benzodioxanyl, benzodioxolanyl, acenaphthyl, carbazolyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, in each case unsubstituted or mono- or polysubstituted; or $-R^8-L-R^9$.

16. (original) The compound of claim 1, wherein:

R^8 represents indolyl, naphthyl, benzofuranyl, benzothiophenyl, indanyl, benzodioxanyl, benzodioxolanyl, acenaphthyl, carbazolyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, fluorenyl, fluoranthenyl, benzothiazolyl, benzotriazolyl or benzo[1,2,5]thiazolyl or 1,2-dihydroacenaphthenyl, pyridinyl, furanyl, benzofuranyl, pyrazolinonyl, oxopyrazolinonyl, pyrimidinyl, quinolinyl, isoquinolinyl, phthalazinyl or quinazolinyl, in each case unsubstituted or mono- or polysubstituted;
L represents -C(O)-NH-, -NH-C(O)-, -C(O)-O-, -O-C(O)-, -O-, -S- or $-S(O)_2-$;

or

R^9 represents indolyl, naphthyl, benzofuranyl, benzothiophenyl, indanyl, benzodioxanyl, benzodioxolanyl, acenaphthyl, carbazolyl, phenyl,

thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, fluorenyl, fluoranthenyl, benzothiazolyl, benzotriazolyl or benzo[1,2,5]thiazolyl or 1,2-dihydroacenaphthenyl, pyridinyl, furanyl, benzofuranyl, pyrazolinonyl, oxopyrazolinonyl, pyrimidinyl, quinolinyl, isoquinolinyl, phthalazinyl or quinazolinyl, in each case unsubstituted or mono- or polysubstituted.

17. (original) The compound of claim 1, wherein:

R^8 represents indolyl, benzothiophenyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, in each case unsubstituted or mono- or polysubstituted;

L represents -C(O)-NH-, -NH-C(O)-, -C(O)-O-, -O-C(O)- or $-S(O)_2-$;

or

R^9 represents indolyl, benzothiophenyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, in each case unsubstituted or mono- or polysubstituted.

18. (original) The compound of claim 1, wherein:

R^8 represents unsubstituted indolyl;

L represents $-S(O)_2-$; and

R^9 represents unsubstituted phenyl.

19. (original) The compound of claim 1, wherein:

R^4 represents $-CHR^6R^7$, $-CHR^6-CH_2R^7$, $-CHR^6-CH_2-CH_2R^7$, $-CHR^6-CH_2-CH_2-CH_2R^7$, $-C(Y)R^7$, $-C(Y)-CH_2R^7$, $-C(Y)-CH_2-CH_2R^7$ or $-C(Y)-CH_2-CH_2-CH_2R^7$ and Y = O, S or H_2.

20. (original) The compound of claim 1, wherein:

R^4 represents $-CHR^6R^7$, $-CHR^6-CH_2R^7$, $-CHR^6-CH_2-CH_2R^7$, $-C(Y)R^7$, $-C(Y)-CH_2R^7$ or $-C(Y)-CH_2-CH_2R^7$ and Y = O or S.

21. (original) The compound of claim 1, wherein:

R^4 represents $-CHR^6R^7$, $-CHR^6-CH_2R^7$, $-C(Y)R^7$ or $-C(Y)-CH_2R^7$ and Y = O.

22. (original) The compound of claim 19, wherein:

R^6 represents H;

C_{1-4}-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; or

$C(O)O-C_{1-4}$-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted.

23. (original) The compound of claim 19, wherein:

R^6 represents H; or

C_{1-4}-alkyl, saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted.

24. (original) The compound of claim 19, wherein:

R^6 represents H, CH_3 or C_2H_5.

25. (original) The compound of claim 19, wherein:

R^7 represents C_{3-8}-cycloalkyl, aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted.

26. (original) The compound of claim 19, wherein:

R^7 represents cyclobutyl, cyclopropyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, anthracenyl, indolyl, naphthyl, benzofuranyl, benzothiophenyl, indanyl, benzodioxanyl, benzodioxolanyl, acenaphthyl, carbazolyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, fluorenyl, fluoranthenyl, benzothiazolyl, benzotriazolyl or benzo[1,2,5]thiazolyl or 1,2-dihydroacenaphthenyl, pyridinyl, furanyl, benzofuranyl, pyrazolinonyl, oxopyrazolinonyl, dioxolanyl, adamantyl, pyrimidinyl, quinolinyl,

isoquinolinyl, phthalazinyl or quinazolinyl, in each case unsubstituted or mono- or polysubstituted.

27. (original) The compound of claim 19, wherein:

R^7 represents cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl, anthracenyl, indolyl, naphthyl, benzofuranyl, benzothiophenyl, indanyl, benzodioxanyl, benzodioxolanyl, acenaphthyl, carbazolyl, phenyl, thiophenyl, furyl, pyridyl, pyrrolyl, pyrazinyl or pyrimidyl, in each case unsubstituted or mono- or polysubstituted.

28. (original) The compound of claim 1, wherein said compound is selected from the group consisting of:

- 4-benzyl-4-dimethylamino-1-phenethylcyclohexanol and the corresponding hydrochloride,
- 4-dimethylamino-1,4-diphenethylcyclohexanol and the corresponding hydrochloride,
- 4-benzyl-4-dimethylamino-1-[2-(2-fluorophenyl)ethyl]cyclohexanol and the corresponding hydrochloride,
- 4-benzyl-4-dimethylamino-1-[2-(4-fluorophenyl)ethyl]cyclohexanol and the corresponding hydrochloride,
- 4-dimethylamino-4-(2-fluorobenzyl)-1-phenethylcyclohexanol and the corresponding hydrochloride,
- 4-dimethylamino-4-(3-fluorobenzyl)-1-phenethylcyclohexanol and the corresponding hydrochloride,
- 4-dimethylamino-4-(4-fluorobenzyl)-1-phenethylcyclohexanol and the corresponding hydrochloride,
- 4-benzyl-4-dimethylamino-1-[2-(3-fluorophenyl)ethyl]cyclohexanol and the corresponding hydrochloride
- 4-benzyl-4-dimethylamino-1-(2-fluorobenzyl)cyclohexanol and the corresponding hydrochloride,

- 4-(allylmethylamino)-4-benzyl-1-phenethylcyclohexanol and the corresponding hydrochloride,
- 4-benzyl-4-dimethylamino-1-(3-fluorobenzyl)cyclohexanol and the corresponding hydrochloride,
- 4-benzyl-4-dimethylamino-1-(4-fluorobenzyl)cyclohexanol and the corresponding hydrochloride,
- 1-benzyl-4-dimethylamino-4-(3-fluorobenzyl)cyclohexanol and the corresponding hydrochloride,
- 4-benzyl-1-phenethyl-4-pyrrolidin-1-ylcyclohexanol and the corresponding hydrochloride,
- 4-benzyl-4-dimethylamino-1-(1-methyl-1H-indol-2-yl)cyclohexanol,
- 1-benzo[*b*]thiophen-2-yl-4-benzyl-4-dimethylaminocyclohexanol,
- 1-benzo[*b*]thiophen-3-yl-4-benzyl-4-dimethylaminocyclohexanol and
- 1-benzofuran-2-yl-4-benzyl-4-dimethylamino-cyclohexanol.

29. (original) A pharmaceutical composition comprising:
at least one substituted 4-aminocyclohexanol compound according to claim 1 and an auxiliary agent.

30. (original) The pharmaceutical composition of claim 29, wherein said compound is present in the form of a free base.

31. (original) The pharmaceutical composition of claim 29, wherein said compound is present in the form of a pure enantiomer or pure diastereoisomer.

32. (original) The pharmaceutical composition of claim 29, wherein said compound is present in the form of a mixture of stereoisomers.

33. (original) The pharmaceutical composition of claim 29, wherein said compound is present in the form of a racemic mixture.

34. (original) The pharmaceutical composition of claim 29, wherein said compound is present in the form of a solvate.

35. (original) The pharmaceutical composition of claim 29, wherein said compound is present in the form of a hydrate.

36. (original) The pharmaceutical composition of claim 29, further comprising an opioid or an anesthetic.

37. (original) The pharmaceutical composition of claim 36, wherein said opioid is morphine.

38. (original) The pharmaceutical composition of claim 36, wherein said anesthetic is hexobarbital or halothane.

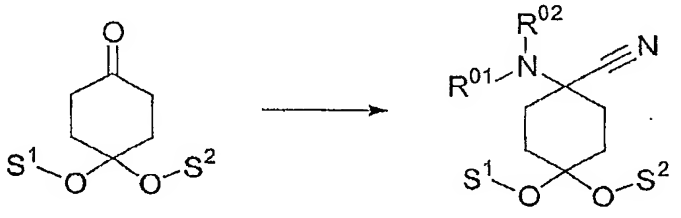
39. (currently amended) A method of alleviating pain selected from the group consisting of acute pain, chronic pain and neuropathic pain in a mammal, said method comprising administering to said mammal an effective pain alleviating amount of a compound according to claim 1 or coadministering to said mammal an effective amount of a compound according to claim 1 with an opioid analgesic or with an anesthetic.

40-42. (canceled)

43. (original) A process for producing a substituted 4-aminocyclohexanol compound according to claim 1 comprising the steps of

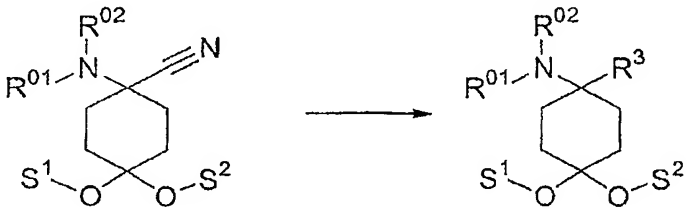
a. reacting a cyclohexane-1,4-dione, protected with the groups S^1 and S^2, according to formula II with a cyanide in the presence of a compound of the

formula $HNR^{01}R^{02}$ to give a protected N-substituted 1-amino-4-oxo-cyclohexanecarbonitrile compound corresponding to formula III;



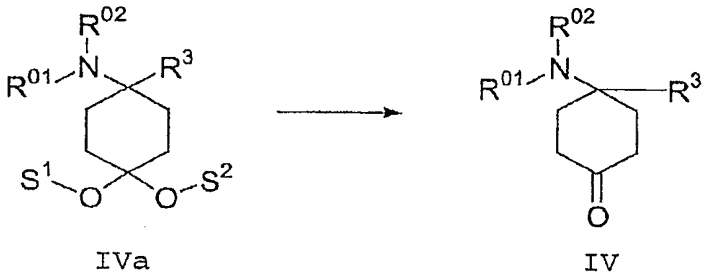
II III

b. reacting the compound according to formula III with organometallic reagents corresponding to the formula metal-R^3, so that a compound corresponding to formula IVa is formed;



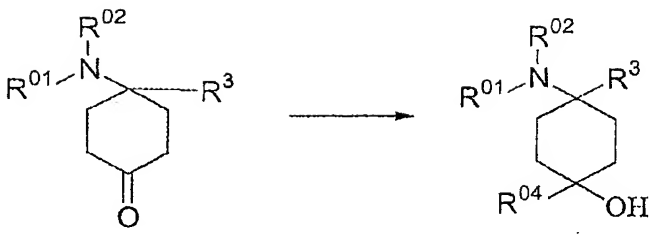
III IVa

c. removing the protective groups S^1 and S^2 on the compound corresponding to formula IVa to form a 4-substituted 4-aminocyclohexanone compound corresponding to formula IV;



IVa IV

d. reacting the 4-substituted 4-aminocyclohexanone compound corresponding to formula IV with organometallic reagents corresponding to the formula metal-R^3 to form compound corresponding to formula V;



IV V

wherein

R^{01} and R^{02} independently of one another represent H; H provided with a protective group; C_{1-8}-alkyl or C_{3-8}-cycloalkyl, in each case saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; aryl-, or heteroaryl, in each case mono- or polysubstituted or unsubstituted; or aryl, C_{3-8}-cycloalkyl or heteroaryl bonded via C_{1-3}-alkylene and in each case mono- or polysubstituted or unsubstituted;

or the radicals R^{01} and R^{02} together form a ring and represent $CH_2CH_2OCH_2CH_2$, $CH_2CH_2NR^{05}CH_2CH_2$ or $(CH_2)_{3-6}$,

wherein R^{05} represents H; H provided with a protective group; C_{1-8}-alkyl or C_{3-8}-cycloalkyl, in each case saturated or unsaturated, branched or unbranched, mono- or polysubstituted or unsubstituted; aryl-, or heteroaryl, in each case mono- or polysubstituted or unsubstituted; or aryl, C_{3-8}-cycloalkyl or heteroaryl bonded via C_{1-3}-alkylene and in each case mono- or polysubstituted or unsubstituted;

R^{04} represents H; H provided with a protective group; C_{3-8}-cycloalkyl, aryl or heteroaryl, in each case unsubstituted or mono- or polysubstituted; $-CHR^6R^7$, $-CHR^6-CH_2R^7$, $-CHR^6-CH_2-CH_2R^7$, $-CHR^6-CH_2-CH_2-CH_2R^7$, $-C(Y)R^7$, $-C(Y)-CH_2R^7$, $-C(Y)-CH_2-CH_2R^7$ or $-C(Y)-CH_2-CH_2-CH_2R^7$; or $-R^8-L-R^9$

wherein Y = O, S or H_2,

and S^1 and S^2 independently of one another represent protective groups or together represent a protective group.

44. (original) The process of claim 43, wherein S^1 and S^2 together represent a monoacetal group.

45. (original) The process of claim 43, wherein step a) further comprises:

acylating, alkylating or sulfonating the compound corresponding to formula III in any sequence and optionally repeatedly; or

where R^{01}, R^{02} or R^{06} = H protected with a protective group, removing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula III; or

where R^{01} or R^{02} or R^{06} = H, introducing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula III.

46. (original) The process of claim 43, wherein step b) further comprises:

acylating, alkylating or sulfonating the compound corresponding to formula IVa in any sequence and optionally repeatedly; or

where R^{01}, R^{02} or R^{06} = H protected with a protective group, removing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula IVa; or

where R^{01} or R^{02} or R^{06} = H, introducing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula IVa.

47. (original) The process of claim 43, wherein step c) further comprises:

acylating, alkylating or sulfonating the compound corresponding to formula IV in any sequence and optionally repeatedly; or

where R^{01}, R^{02} or R^{06} = H protected with a protective group, removing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula IV; or

where R^{01} or R^{02} or R^{06} = H, introducing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula IV.

48. (original) The process of claim 43, wherein step d) further comprises:

acylating, alkylating or sulfonating the compound corresponding to formula V in any sequence and optionally repeatedly; or

where R^{01}, R^{02} or R^{06} = H protected with a protective group, removing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula V; or

where R^{01} or R^{02} or R^{06} = H, introducing at least one protective group and optionally acylating, alkylating or sulfonating the compound corresponding to formula V.

49. (original) The process of claim 43, wherein the protective groups on H in R^{01}, R^{02}, R^{04} or R^{05} are selected from the group consisting of alkyl groups, benzyl groups and carbamates.

50. (original) The process of claim 49, wherein the protective groups are selected from the group consisting of fluorenylmethyl-chloroformate (FMOC), benzyloxycarbonyl (Z) and tert-butyloxycarbonyl (Boc).

51. (original) The process of claim 43, wherein the cyanide of step a) is potassium cyanide.

52. (original) The process of claim 43, wherein the organometallic reagents of step b) are Grignard or organolithium reagents.

53. (original) The process of claim 43, wherein the organometallic reagents of step d) are Grignard or organolithium reagents.